

## WHAT IS CLAIMED IS:

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1. A method for a network to initiate the updating of operational parameters in a mobile station comprising the steps of:
- paging a mobile station from the network;
  - assigning a traffic channel to the mobile station after receiving an acknowledgment of the page;
  - modifying the mobile station responses to received traffic channel messages in accordance with a parameter updating indicator received from the network; and
  - updating operational parameters in the mobile station in accordance with data received on the assigned traffic channel.
2. The method of claim 1 comprising in addition:
- releasing the traffic channel upon completion of the updating procedure.
3. The method of claim 1 comprising in addition:
- comparing a mobile station internally generated signature with a traffic channel received signature where the traffic channel received signature is derived from the home network of the mobile station and where the comparison is performed prior to the updating step.
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4. A method of supplying data to be used in a network initiated over the air updating of operational parameters in a wireless communication system mobile station presently using a user communication traffic channel comprising the steps of:

alerting a mobile station to an administrative update;

5 comparing a mobile station internally generated signature with a traffic channel received signature where the traffic signalling channel received signature is derived from data stored at the home network of the mobile station; and

updating operational parameters in the mobile station in accordance with data received on the assigned traffic signalling channel upon the occurrence of a satisfactory comparison.

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5. The method of claim 4 wherein the alerting comprises the use of a unique service option indicator.

6. A wireless communication system comprising:

first means, including stored operational parameters, for providing mobile communications;

mobile switching center means including base station means for communicating with said first means; and

over the air administration means for network initiating the alteration of said operational parameters stored in said first means.

7. The apparatus of claim 6 comprising in addition:

means, comprising part of said first means, for validating the network initiating the alteration of said operational parameters before completing the stored parameter alteration process.

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10. A method of updating operational parameters in a mobile station of a wireless communication network comprising the steps of:

paging a mobile station with a network initiated update request;

5 correlating a network challenge received by the network from said mobile station with network stored data for validating the network authority to update;

correlating a challenge response from the network with mobile station stored data before accepting update data in said mobile station;

updating operational parameters in said mobile station from network received data; and

10 ~~returning said mobile station to a status that is other than update status.~~

11. The method of claim 10 wherein:

the paging includes a service option parameter to set the mobile station in a over the air programming mode.

12. Mobile station means comprising;

over the air functional entity means for receiving programming instructions and data via a traffic signalling channel;

means for validating the identity of a network service provider, attempting to initiate over the air programming of the mobile station, before allowing update data to be stored; and

~~means for storing over the air received update data.~~

13. The apparatus of claim 12 wherein:

said means for validating combines stored unique and internally generated data to form a secret word which is matched against a similarly generated secret word formed from home network stored data.

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14. A method of alerting a wireless communications network that an attempt to update operational parameters in a mobile station has failed comprising the steps of:

setting a network based over-the-air parameter administration pending flag; and  
storing a network based over-the-air functional address for reinitiating the update

process.

15. The method of claim 14 wherein:

the over-the-air parameter administration pending flag is set in conjunction with home location register data when the location of an mobile station is not available.

16. The method of claim 14 wherein:

the over-the-air parameter administration pending flag is set in conjunction with MSC based data when an attempted update of an mobile station is not completed.

17. The method of claim 16 comprising the additional step of:

transferring the flag indication to the HLR when an mobile station update is not completed within predetermined parameters.

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18. Apparatus for alerting a wireless communications network that an attempt to update operational parameters in a mobile station has failed comprising:

means for setting a network based over the air parameter administration pending flag; and

5 means for storing a network based over the air functionality address for reinitiating the update process.

19. The apparatus as claimed in claim 18 comprising in addition:

means for setting the over the air parameter administration pending flag in conjunction with home location register data when the location of an mobile station is not available.

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20. The apparatus as claimed in claim 18 comprising in addition:

means for setting the over the air parameter administration pending flag in conjunction with MSC based data when an attempted update of an mobile station is not completed.



7.  
21. A method of validating a wireless communication network communicating with a mobile station comprising the steps of:

generating a first secret word, within a mobile station, comprising a predetermined combination of a first word stored internal to the mobile station and a second word generated internal to said mobile station;

generating a second secret word, derived from data stored at the home location network, comprising a predetermined combination of said second word obtained from said mobile station and a copy of said first word as obtained from a home location network register;

supplying said second secret word to said mobile station; and  
comparing said first and second secret words within said mobile station to validate the communicating network.

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22. Apparatus for validating a wireless communication network communicating with a mobile station comprising:

means for generating a first secret word, within a mobile station, comprising a predetermined combination of a first word stored internal to the mobile station and a second word generated internal said mobile station;

means for generating a second secret word, at the home location network, comprising a predetermined combination of said second word received from said mobile station and a copy of said first word as obtained from a home location network register;

means for supplying said second secret word to said mobile station; and

means for comparing said first and second secret words within said mobile station to validate the communicating network.

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23. A method of supplying data to be used in a network initiated over the air updating of operational parameters in a wireless communication system mobile station comprising the steps of:

5      paging a mobile station from the network;

5      setting an administrative updating indicator in the mobile station in accordance with a received message; and

5      updating operational parameters in the mobile station in accordance with data received.

24. The method of claim 23 where the setting and updating are performed on the paging channel.

25. The method of claim 23 where the updating is performed on an assigned traffic channel.

26. The method of claim 23 comprising in addition:

5      comparing a mobile station internally generated secret word with a secret word received from the network where the received secret word is derived from the home network of the mobile station and where the comparison is performed prior to the updating step.

27. A method of supplying data to be used in a network initiated over the air updating of operational parameters in a wireless communication system mobile station comprising the steps of:

paging a mobile station from the network;

supplying a parameter updating indicator to said mobile station; and

updating operational parameters in the mobile station in accordance with data received over the air from the network.

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